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ABSTRACT

An eight-week summer program was conducted to prevent 80 high-risk adolescents from dropping out of high school. The 32 females and 48 males selected for the project were all residents of rural areas of northern Louisiana who had been identified by their public school guidance counselors as being at high risk of dropping out. The program model included three principal components: academic and vocational education and counseling services. Students received instruction in mathematics and language arts as well as 20 hours of on-the-job training per week. Each student thus completed 160 hours of work experience during the program. The program's counseling components consisted of 24-hour personal counseling services provided for the project's duration. All 80 participants registered for the following fall semester and were attending high school classes at the time of the follow-up survey. Statistically significant progress was made by the participants in both mathematics and language arts during the eight-week program, as measured by the California Achievement Test (Level 18). Average gains of 57.2 percent in mathematics computation, 51.6 percent in mathematics concepts, 17.7 percent in reading comprehension, and 44.5 percent in spelling were recorded. On a six-point scale, the participants' overall work behavior was found to increase 3.72. (MN)

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Curbing Dropout Rates:

An Ecological Model

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Abstract

An eight week summer program was designed and implemented to prevent 80 "high-risk" adolescents from dropping-out of school. Participants were removed from their home environment and provided a total immersion curriculum which included academic and vocational training, as well as, 24-hour personal counseling services. The model program is described and academic/vocational data are provided. Additionally, a 100% program success rate in drop-out prevention, as a result of initial follow-up studies, is discussed.

Curbing Dropout Rates:
An Ecological Model

A fundamental challenge faces American public schools today as the current reform movement pushes ahead in a drive toward achievement of academic excellence. Although educational reforms are currently considered absolutely necessary by responsible people in varying sectors of American society in order to raise levels of student performance, the problems associated with achieving both excellence and equity simultaneously are indeed formidable (Spady, 1984). A common rationale countering the push toward rigorous academic standards maintains that minorities and the poor would be pushed out of the system (Validvieso, 1986). Among those minorities and poor are the growing numbers of students dropping out of American public schools.

Approximately one fourth of the nation's 17-year-olds do not graduate from high school as a result of dropping out of school. In 1981, by the time of graduation, 16% of whites, 19% of blacks, and 26% of hispanics had dropped out of school (Select Committee, 1983). The pervasiveness and complexity of this problem facing American education has stimulated much research into probable causes and possible solutions. Certain

variables appear to correlate highly with the overall dropout problem. Some of the most highly correlated variables include the following:

1. Low socioeconomic class of family
2. Lack of books and other reading materials in the home
3. Level of schooling of parent of same sex
4. Low grades in school
5. Teen pregnancy (Alexander, 1975; Bachman, 1978; and Rumberger, 1983)

Evidence also suggests that 75% of high school dropouts have experienced their first failure by the fourth grade. Failing a grade is significantly correlated not only with dropping out of school but also with opting not to continue beyond the high school level of education. Early failure in English (more specifically reading) and mathematics effect performance in other curriculum areas so that by the time students experiencing such failures reach high school, they lack the basic skills to perform successfully at that level (Fitzsimmons, 1969).

Fourteen seems to be a particularly significant age in the life of a potential dropout. Educational

attitudes developed during early childhood appear to be integrated by age fourteen into behavioral patterns associated with school success or lack thereof (Rumberger, 1983). It is at this period of life that adolescents make decisions effecting both their personal and educational futures.

Although the specific definition of a dropout is debatable, Morrow (1986) estimates that 6% of all dropouts occur in grades K-8, 39% occur in grades 11-12, and 55% occur in grades 9-10. These data indicate that if the dropout rate is to be reduced, preventive efforts must focus on those identified as "potentials" during early adolescence and must continue through graduation.

Hamilton (1986), after reviewing the professional literature on school dropouts, concludes that prevention programs should include the following components:

1. Separation of potential dropouts from other students
2. Inclusion of a strong vocational component
3. Use of out of class instruction
4. Intensive counseling

The program described below was designed to accommodate the diverse needs of potential dropouts from rural

settings. The rather unique structure of the program afforded an opportunity to remove "at risk" students from their home environment and place them to in an ecologically controlled dropout-prevention curriculum.

Method

A total immersion summer program, 8 weeks in length, was designed and implemented for 80 economically disadvantaged,'high-risk dropouts' from 14 to 16 years of age. The population included 32 females and 48 males from rural settings in northern Louisiana. Participants were identified by public school guidance counselors as being 'at high risk' for dropping out of school before graduation. The primary objective of the program was to encourage participants to remain in school and to complete requirements for a high school diploma.

The program model included three basic components; academic, vocational, and counseling. In the academic component, students were provided instruction in mathematics and language arts, earning 1/2 Carnegie unit of credit in each academic area to be credited toward graduation. In the vocational component, students were provided vocational training and counseling in addition

to 20 hours per week of on-the-job training. For the total program, each student completed 160 hours of work experience. The counseling component consisted of 24 hour personal counseling services provided to participants for the duration of the project.

Project Description

Identification of Participants. Participants were selected by high school counselors in an 18 parish region of northern Louisiana. Those selected were from rural settings and were considered by counselors to be "at high risk" for dropping out of school before high school graduation. The criteria provided to school counselors to be used in the selection process included the following:

1. Economic disadvantages
2. Academic performance
3. Behavioral/adjustment problems
4. Family history of dropout
5. Personal interview revealing high-risk factors
6. Counselor judgement

Counselor recommendations were based on either a single

major factor or combination of factors placing students at "high-risk" as potential dropouts in their respective geographic region.

Counseling Component. Participants were housed in student dormitories on the Louisiana Tech University campus for the 8 week duration of the project. During their stay each participant received group counseling one hour minimum per week, as well as, vocational counseling on a rotating basis from two full-time vocational counselors. In addition, fourteen full-time student counselors were assigned seven to nine participants and served as personal counselors on 24 hour call. The student counselors were university students given pre-program training in appropriate counseling techniques and theory. Two full-time master counselors and one full-time counseling head implemented and coordinated the counseling component of the project.

Academic Component. Participants attended academic classes five days per week for the duration of the program. During that time, students participated in 120 clock hours of group and individualized instruction, 60 hours in mathematics and 60 hours in language arts.

Two team teachers worked with 20 students, resulting in a 10:1 student to teacher ratio. Participants who successfully completed the academic component received 1/2 Carnegie unit of credit in mathematics and 1/2 Carnegie unit of credit in language arts, both of which could be applied toward credit for high school graduation. The primary thrust of the mathematics component was on mastery of basic operations and problem solving skills. Basic algebra concepts were also introduced to selected students. In the language arts component, teachers concentrated on development and mastery of reading skills and expository writing skills. Both language arts and math skills were reinforced through the use of appropriate computer software.

Vocational Component. Program participants were placed in a variety of work sites on the university campus. All students worked four hours per day and received minimum wage for their services. Work supervisors, as well as, vocational counselors and student counselors, monitored work experiences and provided 'on-the-job' vocational instruction andsupport. Students were assigned as assistants to the following work sites; clerical offices, library, academic departments, building and grounds, maintenance,

professional aviation, equine farm, and university police.

Results

The primary objective of this program was to prevent participants from dropping out of secondary public school. In order to measure achievement of this objective, questionnaires were mailed to school principals to determine if program participants were enrolled in school and attending classes on a regular basis in the following fall semester (1986-87 school year). Responses from principals revealed that all 80 participants (100%) had registered for the fall semester and were attending classes.

Another objective of the program was to achieve quantifiable participant gains in academic and vocational performance. Data were collected at the beginning and end of the program for the purpose of evaluating improvement.

Description of Participants

There were 48 males (60%) and 32 females (40%) who served as subjects in this model program. All subjects were judged by their respective school counselors to be

"at high risk" for dropping out of school. Chronological ages of program participants ranged from 14 to 17 years, the average age being 15.5. The initial criterion for selection of participants was family income, designated by federal government regulations as being at or below the poverty level. Secondary criteria (listed previously) served as screening devices and as guidelines by school counselors in the process of identifying those at the greatest risk for dropping out of school. Additional demographic data on program participants are provided in Table 1.

Insert Table 1 about here

Academic Data

Statistically significant progress was made by participants in both mathematics and language arts during the 8 week program. Pre- and post-test data, raw-score California Achievement Test (Level 18) data, indicate an average gain of 57.2% in mathematics computation and an average gain of 51.6% in mathematics concepts. In language skills, mean increases ranged from 17.7% for comprehension to 44.5% for spelling.

Additional data related to academic gains are reported in Table 2.

Insert Table 2 about here

Vocational Data

University personnel who supervised project participants in job situations were asked to rate improvement in seven areas of vocational competence. The rating scale used a 6-point Likert-type scale. The categories ranged from 0 (little or no improvement) to 5 (greatly improved). The mean improvement ratings for "overall work behavior" was 3.72. As reported in Table 3, significant ($p<.001$) improvement was shown for all seven vocational competencies.

Insert Table 3 about here

The initial project results indicate a 100% success rate for the primary objective, in that none of the participants have dropped-out of school. Additionally, the results indicate a significant improvement in academic (mathematics and language arts) and vocational

competencies for participating students.

Discussion

The seriousness of the dropout problem in American schools cannot be overemphasized, and the difficulties involved in ameliorating the situation are numerous. Because the variables contributing to dropout rates are numerous and complex, identification of preventive measures has proven to be a formidable task for the education community. (Kolstad, 1986; Peng, 1985)

The program described was designed to meet the individual academic, vocational, social, and personal needs of adolescents identified by high school counselors as being at "high risk" for dropping out of school before graduation. The model provided an ecologically oriented curriculum, designed to remove the student from his/her home environment and to "totally immerse" each participant in an environment conducive to identifying and addressing individual needs. The relative success of the program is perceived as a direct result of the multifaceted nature of the curriculum. Participants were provided highly structured, quality experiences for all three components of the program:

academic, vocational, and counseling. The relative success of the program seemed attributable in part to the balanced emphasis given the three program components.

Replication of such a program may not be a pragmatic option for many school systems, primarily due to the strong emphasis on ecological orientation. The results of the program do, however, emphasize the impact of addressing the dropout problem on an individual needs basis. Additionally, the apparent personal and individual nature of the etiology of high school dropouts implies the use of an assessment and deterant curriculum which addresses the characteristic needs of each 'at risk' student.

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TABLE 1

Demographic Characteristics

Race (N)

Sex (N)	Black	White		
F	26	6	32	(40%)
M	41	7	48	(60%)
	67	13	80	
	(84%)	(16%)		

Grade	N	%
7	9	11.0
8	21	26.3
9	39	48.8
10	11	13.8

TABLE 2

Academic Progress as Measured by the

California Achievement Test* (CAT) (N = 80)

CAT Subscale	Pre-Test Mean	Post-Test Mean	Average Gain (%)	t-Ratio Post-Pre	p df=79
Vocabulary	27.4	33.9	+27.8	6.13	<.001
Comprehension	32.7	36.8	+17.7	4.60	<.001
Spelling	23.5	31.0	+44.5	6.54	<.001
Language Mechanics	19.7	25.1	+30.5	9.98	<.001
Language Expression	34.5	39.9	+18.4	5.17	<.001
Math Computation	28.4	41.5	+57.2	10.17	<.001
Math Concepts	29.7	41.5	+51.6	8.43	<.001

* Indicated in Raw Scores

TABLE 3

Average Rating of Improvement in

Vocational Competencies* (N =80)

Vocational Competency	Average Improvement	t-Ratio (H_0 : = 0)	p (df = 79)
Attendance	3.91	31.53	<.001
Punctuality	3.76	26.25	<.001
Appearance	3.88	36.52	<.001
Attitude	3.83	29.30	<.001
Follows Directions	3.83	31.52	<.001
Employability	3.50	24.61	<.001
Overall Work	3.72	29.44	<.001

* Based upon a 6-point Likert-type scale ranging from 0 (little improvement) to 5 (greatly improved) for each competency.